Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

DRAFT
Title V/Synthetic Minor
Permit: V-02-033 Revision 1
Griffin Industries, Inc.-Butler Facility
Butler, KY 41006
02/07/2007
Lisa Beckham, Reviewer

SOURCE ID:	21-191-00007
SOURCE A.I. #:	3408
ACTIVITY ID:	APE20060001

SOURCE DESCRIPTION:

On December 11, 2006 Griffin Industries, Inc. (Griffin) submitted an application for a significant revision to their Butler facility's Title V/synthetic minor permit and additional information was submitted on February 5, 2007. The Butler facility operates a rendering plant as well as a bakery scrap operation in Pendleton County, Kentucky. In the rendering facility animal by-product materials are processed into tallow, grease, and high protein meat and bone meal. The bakery scrap operation dries scrap breads and dough to form cookie meal.

CURRENT PERMITTING ACTION: V-02-033 REVISION 1, SIGNIFICANT REVISION

This permit includes an emissions cap on hydrogen chloride, the addition of recycled cooking oil as a fuel source for two of the facility's boilers and the removal of the cooling tower as an emission unit to the insignificant activities list. Also Griffin submitted an economic analysis for the installation of a regenerative thermal oxidizer (RTO) unit to control VOC emissions from its bakery scrap process.

It was discovered while reviewing Griffin's Russellville facility that potential emissions of hydrogen chloride at the Butler facility exceed 10 tons per year. To prevent being a major source for a hazardous air pollutant and applicable to 40 CFR 63, Subpart DDDDD Griffin proposed a source-wide emissions cap on hydrogen chloride. This proposal in included in this permit.

In the initial Title V application Griffin assumed the injection of ammonia to the cooling tower, and was granted the usage based on dispersion modeling analysis by the Division and the state's rescinded toxics Regulation 401 KAR 63:022. The reason is that ammonia is not injected or processed at the facility, and is only used as a cleaner (which results in the trace quantities detected in the water from the cooling tower, which can be stripped or emitted to the air). The Division has revaluated recent submittal by the facility that ammonia is not emitted at the facility and concurs that the cooling tower should be classified as insignificant. With removal of the ammonia injection, 401 KAR 63:022 or 401 KAR 63:021, is no longer applicable to the facility, therefore emission Unit 05, Cooling Tower, has been moved to the facilities list of insignificant activities. The KYEIS system has been updated to reflect this change.

The use of recycled cooking oil as a fuel choice has been added to emission units 01 and 02. Potential emissions from the use of recycled cooking oil are generally lower than that of the

other fuels listed for these units. Griffin previously had a source-wide emissions limit on VOC of 90 tons per year to preclude the applicability of 401 KAR 50:012. Griffin has proposed to remove the 90 tons per year limit by showing that the installation of an RTO to control VOC emissions is not economically justifiable and therefore should not have to restrict emissions. It is difficult to determine Griffin's VOC potential to emit because the emissions from the bakery scrap process are not consistent due to variation in the product they receive for the process. The economic analysis submitted by Griffin was based on a potential of 113 tons per year from the bakery scarp process and this analysis showed that the installation of a regenerative thermal oxidizer (RTO) to reduce VOC emissions would not be economically justified. Because of the variation in the product Griffin receives, 113 tons per year does not likely represent their maximum potential, which is believed to be over 250 tons per year; however, if a source-wide potential of 250 tons per year is assumed in the RTO analysis (195 tons from the bakery scrap process) it is still not economically justified. Therefore, the source-wide emissions limit of 90 tons per year on VOC has been removed and replaced with a source-wide emissions limit of 225 tons per year.

APPLICABLE REGULATIONS

401 KAR 59:015, New Indirect Heat Exchangers for affected facilities with a heat input capacity of 250 MMBtu/hr or less and commenced on or after April 9, 1972, applies to EU 01, EU 02, and EU 03.

401 KAR 59:010, New Process Operations not subject to another emission standard with respect to particulates and commenced after July 2, 1975, applies to EU 03 and EU 07.

401 KAR 59:020, New incinerators, applicable for incinerators commenced after June 6, 1979 with a charging rate of fifty tons/day or less, applies to EU 07.

401 KAR 60:005, Incorporating by reference 40 CFR 60, Subpart WWW, Standards of performance for municipal solid waste landfills, applies to EU 01 and EU 02

401 KAR 63:010, Fugitive emissions is applicable to each affected facility which emits or may emit fugitive emissions and is not elsewhere subject to an opacity standard within the administrative regulations of the Division for Air Quality.

40 CFR 279, Standards of Management of Used Oil and 40 CFR 761, PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions, applies to EU 01 and EU 02

Non-Applicable Regulations:

- 40 CFR 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Institutional, Commercial, and Industrial Boilers and Process Heaters, applicability data of September 13, 2007.
- 401 KAR 51:017, Prevention of Significant Deterioration of Air Quality

EMISSION AND OPERATING CAPS DESCRIPTION:

- To preclude the applicability of 401 KAR 51:017, Prevention of significant deterioration, source-wide sulfur dioxide and volatile organic compounds emissions shall not exceed 225 tons per year based on a twelve (12) month rolling total.
- To preclude 40 CFR 63 Subpart DDDDD, NESHAPs for Institutional, Commercial, and Industrial Boilers and Process Heaters, after the applicability date of September 13, 2007, total source-wide Hydrogen Chloride (HCL) emissions shall not exceed 9.0 tons per year and combined HAPs shall not exceed 22.5 tpy
- To preclude the applicability of 401 KAR 51:017, source wide coal consumption shall not exceed 9,000 tons per year on a twelve-month rolling total and the sulfur content of the coal shall not exceed 1.0 percent by weight.

Emissions Units 01 and 02 (EP 01, 02) Indirect Heat Exchangers

Two 33.5 MMBtu/hr, each, Cleaver Brooks horizontally opposed fired boilers – These boilers are used to supply heat to the various processes of the facility. These units can burn: #6 fuel oil, "on spec" used oil, landfill gas and recycled cooking oil. Emission factors for #6 fuel oil, "on spec" used oil and landfill gas were taken from AP-42 data. Emission factors for the recycled cooking oil were taken from stack test data at another Griffin facility.

To preclude the applicability of 401 KAR 51:017 and 40 CFR 63, Subpart DDDDD, #6 fuel oil consumption for emission unit 01 and 02 unit shall not exceed 537,500 gallons per year on a twelve-month rolling total. The sulfur content of each shipment of #6 fuel oil shall not exceed 0.5 percent by weight per ASTM standards. Additionally, "on spec" used oil usage for each unit shall not exceed 525,000 gallons per year on a twelve-month rolling total. The sulfur and ash content of "on spec" used oil shall not exceed 0.5 percent and 0.77 percent by weight per ASTM standards, respectively.

To preclude the applicability of 40 CFR 63, Subpart DDDDD the halogen content of each shipment of "on spec" used oil shall not exceed 800 ppm of Total Halogens.

Pursuant to 40 CFR 279, 40 CFR 761.20, and to preclude 40 CFR 63 Subpart DDDDD, On-Specification (On-Spec) Used Oil shall not exceed the allowable levels below:

ON-SPEC USED OIL SPECIFICATIONS	
Constituent/Property	***Allowable Level***
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total halogens	800 ppm maximum
Flash Point	100 °F minimum
PCBs	less than 2 ppm

Pursuant to 40 CFR 60, Subpart WWW, the owner or operator of a combustion device who uses or purchases landfill gas for fuel in the combustion device shall use the gas only as a fuel, and venting of treated landfill gas to the ambient air is not allowed.

Pursuant to 401 KAR 59:015, Section 4(1)(c), particulate emissions shall not exceed 0.36 lb/MMBtu each, based on a three-hour average.

Pursuant to 401 KAR 59:015, Section 4(2), emissions shall not exceed 20 percent opacity based on a six-minute average, except that a maximum of 40 percent opacity, based on a six-minute average, shall be permissible for not more than 6 consecutive minutes in any consecutive 60 minutes during cleaning the fire-box or blowing soot.

Pursuant to 401 KAR 59:015, Section 4(2), for emissions during building a new fire for the period required to bring up to operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.

Pursuant to 401 KAR 59:015, Section 5(1)(c), sulfur dioxide emissions shall not exceed 1.37 lb/MMBtu each, based on a twenty-four-hour average.

Emissions Unit 03 (EP 03, 04) Rendering Process

A cooker is used to remove moisture from incoming inedible animal by-products. Through this process the animal by-products are processed into tallow, grease and high protein meat and bone meal. The emission factors for this process were taken from stack test data. To control emissions of particulates (PM) and volatile organic compound (VOC) a venturi scrubber, packed tower scrubber, and room air scrubber are used.

Pursuant to 401 KAR 59:010, Section 3(3), particulate emissions from the stack shall not exceed $[3.59(P)^{0.62}]$ pound per hour based on a three-hour average where P is the weekly average processing rate in tons per hour. If the process rate weight is 1,000 lbs/hr or less than the limit on particulate matter emissions is 2.34 lbs/hr.

Compliance Demonstration Method:
Compliance with the allowable particulate standard is demonstrated by utilizing the particulate performance test on the rendering process at the facility in February 2004. The average PM emission was 0.23 lbs/hr, which is below the allowable rate even if the unit is processing 1,000 lbs/hr or less.

Pursuant to 401 KAR 59:010, Section 3(1)(a), any continuous emissions into the open air shall not equal or exceed 20 percent opacity based on a six-minute average.

Emission Unit 04 (EP 03) Indirect Heat Exchanger

45.8 MMBtu/hr coal boiler, overfeed stoker – This boiler is used, as necessary, to supply heat to the various processes of the facility. Emission factor information for this unit was taken from AP-42 data. Mechanical collectors are used to control emissions from this unit.

Pursuant to 401 KAR 59:015, Section 4(1)(c), particulate emission shall not exceed 0.32 lbs/MMBtu based on a three-hour average.

Pursuant to 401 KAR 59:015, Section 4(2), emissions shall not exceed 20 percent opacity based on a six-minute average, except that a maximum of 40 percent opacity, based on a six-minute average, shall be permissible for not more than 6 consecutive minutes in any consecutive 60 minutes during cleaning the fire-box or blowing soot.

Pursuant to 401 KAR 59:015, Section 4(2), for emissions during building a new fire for the period required to bring up to operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.

Pursuant to 401 KAR 59:015, Section 5(1)(c), sulfur dioxide emissions shall not exceed 1.71 lbs/MMBtu based on a twenty-four-hour average.

Emissions Unit 06 (EP 06) Raw material and blending stock unloading, storage, and loading to process feed hoppers

Emission Unit 06 - Incoming bakery scrap is unloaded, stored and loaded to process feed hoppers prior to entering the dryer. Emission factors for this unit were taken from AP-42 data. This process can operate up to 60 tons per hour. Particulate emissions from this process are limited because it is enclosed within the building.

Pursuant to 401 KAR 63:010 Section 3, no person shall cause or permit the discharge of visible fugitive dust emissions beyond the lot line of the property on which the emissions originate. In addition, reasonable precautions shall be taken to prevent particulate matter from becoming airborne, including the materials processed at each unit listed above shall be controlled with wet suppression and/or enclosures so as to comply with the standards specified in Section 3 of 401 KAR 63:010, Fugitive emissions. Compliance is demonstrated when daily observations indicate no visible fugitive dust emissions extend beyond the property line and that the processes and controls are operating normally. Observations and records, if applicable, shall be utilized to document failure to comply.

Emissions Unit 09 (EP 09) Product loadout

Emission Unit 09 - The finished cookie meal product is loaded to by shipped. Emission factors for this unit were taken from AP-42 data. This process can operate at 46.2 tons per hour. Particulate emissions from this process are limited because it is enclosed within the building.

Pursuant to 401 KAR 63:010 Section 3, no person shall cause or permit the discharge of visible fugitive dust emissions beyond the lot line of the property on which the emissions originate. In addition, reasonable precautions shall be taken to prevent particulate matter from becoming airborne, including the materials processed at each unit listed above shall be controlled with wet suppression and/or enclosures so as to comply with the standards specified in Section 3 of 401 KAR 63:010, Fugitive emissions. Compliance is demonstrated when daily observations indicate no visible fugitive dust emissions extend beyond the property line and that the processes and controls are operating normally. Observations and records, if applicable, shall be utilized to document failure to comply.

Emissions Unit 07 (EP 07) Close-coupled gasification (CCG) unit and product dryer

Bakery scrap is fed to a dryer, which can operate at 25 tons per hour, to remove moisture to produce the "cookie meal" product. A CCG unit is used to supply heat to the process (22.5 MMBtu/hr). The CCG unit uses sawdust and scrap-packaging materials as fuel and can process up to 2812 lbs/hr of sawdust or 1500 lbs/hr of scrap packaging. A cyclone is used to control particulate emissions from the CCG unit. Emission factor information was taken from stack test data for particulates and hydrogen chloride, by using a formula for VOC, and AP-42 data for CO, NO_X and SO_2.

Pursuant to 401 KAR 59:020, the CCG unit charging rate shall not exceed 50 tons per day of sawdust and scrap packaging materials.

Pursuant to 401 KAR 59:020, Section 3(2)(a), particulate matter emissions from the CCG unit shall not exceed 0.23 g/dscm corrected to twelve (12) percent carbon dioxide excluding the contribution of carbon dioxide from auxiliary fuel.

Pursuant to 401 KAR 59:010, Section 3(3), particulate emissions from the stack shall not exceed $[3.59(P)^{0.62}]$ pound per hour based on a three-hour average where P is the weekly average processing rate in tons per hour. If the process rate weight is 1,000 lbs/hr or less than the limit on particulate matter emissions is 2.34 lbs/hr.

Pursuant to 401 KAR 59:020, Section 3(1), visible emissions shall not exceed twenty (20) percent opacity based on a six-minute average.

Emissions Unit 08 (EP 08) Product and blending stock mixing, size reduction, and storage

Once the cookie meal product is dried it goes through mixing and size reduction and then goes to storage. This process can operate up to 46.2 tons per hour. Particulate emissions from this process are limited because it is enclosed within the building.

Pursuant to 401 KAR 59:010, Section 3(3), particulate emissions from the stack shall not exceed $[3.59(P)^{0.62}]$ pound per hour based on a three-hour average where P is the weekly average processing rate in tons per hour. If the process rate weight is 1,000 lbs/hr or less than the limit on particulate matter emissions is 2.34 lbs/hr.

Pursuant to 401 KAR 59:010, Section 3(1)(a), any continuous emissions into the open air shall not exceed twenty (20) percent based on a six-minute average.

CREDIBLE EVIDENCE:

This permit contains provisions, which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.